

ABSTRACT OF THE DISCLOSURE

A reliability evaluation test apparatus of this invention includes a wafer storage section which stores a wafer in a state wherein the electrode pads of a number of devices formed on the wafer and the bumps of a contactor are totally in electrical contact with each other. The wafer storage section transmits/receives a test signal to/from a measurement section and has a hermetic and heat insulating structure. The wafer storage section has a pressure mechanism which presses the contactor and a heating mechanism which directly heats the wafer totally in contact with the contactor to a predetermined high temperature. The reliability of an interconnection film and insulating film formed on the semiconductor wafer are evaluated under an accelerated condition.